Attachment 1

to Operations Group Chairman's Factual Report

DCA06MA022

INTERVIEW SUMMARIES

A summary of the interviews conducted by the Operations Group during the Field Phase of the accident investigation follows:

Interview:	Michael J. Higgins, DC-8 Captain, United Parcel Service Company
Represented By:	Self
Date:	February 9, 2006
Time:	1555 EST
Location:	Marriott Philadelphia Airport, PHL
Present:	Operations Group

During the interview, Captain Higgins stated the following information:

Captain Higgins began his professional flight career as a civilian flight instructor and then moved on to charter work. After that, he flew for Allegheny Commuter for five to six years. He then flew Convairs for Wright Airlines in Cleveland, Ohio. From there he flew a Learjet as a corporate pilot for Dana Corporation in Toledo, Ohio. In 1979, he was hired by Evergreen Airways, flying DC-8's, and afterwards, flew DC-8's for United Air Carriers in Saudi Arabia, before being rehired by Evergreen. He was hired by UPS on September 18, 1988.

At first, it looked like the accident flight (UPS flight 1307) was actually going to depart early from Atlanta, Georgia; however, the load supervisor came back into the airplane to bring paperwork, and in doing so, inadvertently deployed the emergency slide. After maintenance placed the emergency slide back into the canister, the flight left with only a slight delay.

The flight was totally uneventful en-route until the beginning of the descent into PHL when the copilot asked the rest of the flight crew if they smelled an odor. No smoke was observed at that time. The captain asked the flight engineer to go back to look for smoke and the origin of the odor. The flight engineer saw nothing. The captain reviewed the pack smoke procedure in the QRH which called for turning off various items. After doing some trouble shooting, the flight crew still could not decide where the odor was coming from.

The captain then began to think about diverting, but since the odor began to dissipate, he elected to continue the flight. There was no evidence of a problem such as the illumination of smoke detector lights and the flight was already in the descent for PHL. One thought of why not to divert to an airport in the Washington, D.C. area was because of all of the security hassles of landing at one of those airports.

As the flight leveled off at 4,000 feet, the odor became stronger, and simultaneously

the smoke warning light came on. He commented to the rest of the flight crew that it looked like they had an actual fire, and instructed the flight engineer to perform the QRH procedures by himself because they were going to be landing soon. The flight was 10 miles out and cleared to land. He then radioed to the tower that they had a fire light and to have the equipment meet the flight upon landing. When the tower replied, he could hear the emergency horn going off in the background. The captain then instructed the first officer to fly direct to airport.

The crew donned oxygen masks but because of the lack of smoke, elected not to use the smoke goggles.

The captain recalled that the approach controller initially cleared the flight for the right side runway [27R] but, because they were "angling" the approach, the tower thought they were landing on the left side runway [27L]. Since the flight crew had briefed to land on the right side runway, he asked if the right side runway was okay to land on, and the tower subsequently cleared the flight to land on the right side runway.

As the airplane neared the runway, the lower cargo fire light illuminated, followed by the illumination of the master warning light. Then the captain's EFIS flight instruments failed.

The airplane was configured for landing, and he conducted the landing checklist by himself.

On short final, smoke started building and during the landing rollout, the smoke became very dense. Once the airplane came to a stop, he set the parking brake, opened his window, and began the evacuation procedures. He tried to get a breath of fresh air out the window.

He recalled that during the evacuation process, both he and the copilot tried to find the fire handles and the fuel control levers. He then heard the flight engineer "pop" the slide.

He reached back to find the rope, grabbed it, and threw it out the window.

The first officer could not find his rope and he also may have had an issue with his size relative to the window. The captain asked if the copilot was okay, and observed him getting up. The copilot soon disappeared from view due to the heavy smoke as he headed towards the cockpit door.

The captain then began to grope around in an attempt to locate the hazardous material paperwork but he could only locate the flight paperwork. He became concerned about whether or not the copilot got out of the airplane. He immediately exited toward the galley area, did not see the copilot, and exited the airplane via the slide.

ARFF was already there once he got off the slide, and he informed them that there

were hazardous materials on board the airplane. He also informed them that he could not locate the hazardous materials paperwork, but UPS could be able to provide it.

The EMTs [Emergency Medical Technicians], hospital, and ARFF were all great. They got in an ambulance and were taken to a hospital where they stayed most of the night.

The red Master Warning light was on the copilot's side of the cockpit.

All of the left side EFIS screens were "flagged," and he did not have any indications that an EFIS screen would normally provide. There was power to the screens but no information was being displayed. All other gauges were working on his side of the cockpit.

The flight was totally normal until the descent.

The DC-8 has many different smells and the cargo on board could also affect odors. One time he transported lacquer furniture on board the airplane, and he could smell that odor. He stated that he could smell forest fires when flying over them.

He stated that they accomplished the procedures and the smells went away. They turned the packs off one at a time and began "losing" the cabin. This may have sucked out the fumes and kept them away from the crew.

It did not seem like a situation that deserved diversion. Andrews Air Force Base was the closest landing facility but there are risks from diving into an unknown field and particularly a military facility. They were already descending to an airport with good fire fighting equipment. The first officer did his best to get the airplane on the ground, and PHL was the closest place in time. The first officer and flight engineer did an excellent job.

He did not recall how far out the flight was from PHL when they first became aware of the odor. He had heard that it might have been 150 miles or so. He was involved in sending the flight engineer to the back. He knew that Washington D.C. was off to their left and then BWI [Baltimore/Washington International Thurgood Marshall Airport] was next, proceeding direct to Woodstown VOR. ATC did start the flight down early, so maybe it was 25 minutes prior to landing.

He has had a number of simulator sessions and scenarios that dealt with in-flight fires, engine fires, and cabin fires. All of the training was very helpful. It is difficult, especially if you have to put on smoke goggles as well as the oxygen mask, because it is challenging to keep the airplane under control and "shoot" an unusual approach. Smoke goggles can be difficult to see through. Fortunately, there was no smoke until late in the approach so no smoke goggles were necessary.

He went down the slide, but had initially planned on using the rope to evacuate the airplane. He made the decision to use the slide because he could check the area behind the cockpit to make sure the copilot made it out of the airplane.

There was no trouble locating or using the escape rope.

Captain Higgins said that it was hard going back and forth between a night schedule at work and the day schedule that he kept when he was at home. When he did not have work responsibilities, he typically went to bed about 0100 to 0200 and awoke about 0630 when his wife had to get up early for work and about 0930 when she did not. On Friday, February 3, 2006, he completed his first class medical examination and was unable to catch a jump seat flight until after the morning "sort." On Saturday, February 4, 2006, he arrived home from work about 0730, having caught some sleep on the jump seat during the flight. He remained awake the rest of the day and went to bed about midnight. On Sunday, February 5, 2006, he awoke at 0700 to 0800, watched the Super Bowl, and went to bed at midnight. He awoke on Monday, February 6, 2006, about 0630 and flew to ATL. He arrived in ATL about 1130 and did not sleep during the day. He had a 2115 reporting time for work.

He had been off duty for most of January, after being busy throughout December.

He experienced a previous incident in the early 1980s in which they scraped a pod. He experienced a previous emergency when he flew for Evergreen involving a passenger flight. The two main tires burst during takeoff, throwing rubber all around the runway. They were past V_1 but could not get rotation speed until 2,000 feet from the end of the runway. They scraped the tail and got the stick shaker. They had to dump fuel and declare an emergency. He also experienced in-flight engine failures. He had not experienced an in-flight fire or known any other pilot who had.

There had been no major changes in his personal or financial situations in the past six months. His health was fine and had not changed in the past six months. His vision was good and he wore corrective lenses. His hearing and sense of smell were good. The odor was a light smell, hard to place. The first officer described it as "woody."

He did not know where the fire was located although, if there had been more time, they might have had a better idea of its location. The smoke detector light does not tell which position is affected unless you select it and they were too busy to pinpoint this. The lower detector has a readout, and said that the C1 area was affected; however, this area may have gotten smoke through the ducting. The warning could suggest that there were fires in the lower and upper compartment in quick succession.

Based on his experience, he would recommend the following:

- There is a desperate need for fire suppression capability
- The fire detection system may not have worked well, since it took a long time to set off detection
- He would like to have visible reflective tape installed on the escape rope cover
- He would like to have the oxygen mask/smoke goggle combination units installed in the cockpit

He kept his flashlight in his flight kit.

The oxygen mask was good. The fit was okay and adjustable. There are combination oxygen units that include built-in masks, but these would not have helped them because smoke was not a factor until they stopped; however, the current oxygen mask is cumbersome.

There is no fire warning horn except for the engines.

He donned the oxygen mask just after he told the tower to roll the equipment. This was before smoke came to the cockpit. They performed the landing checklist while wearing masks, which made it difficult to work switches on the pedestal. The mask limits motion and he had to complete the landing checklist without the assistance of the first officer.

On the approach, they wanted to get to the runway quickly but the DC-8 is hard to slowdown. You want to keep it under control. During the approach, the glide slope warning activated, maybe because they were low or maybe because the captain's instruments failed.

He recalled making the 500-foot call, but did not recall making the 1,000-foot call. "500 feet, on speed, sinking seven."

During simulator training sessions, the QRH was used to address emergency situations because it was handy. If the procedure were not in the QRH, the AOM would be utilized.

The captain felt that company culture places an emphasis on on-time departures and arrivals and fuel burn, but there was no company pressure to continue onto PHL. "The company expects me to look out for safety and that is what I do." He would not hesitate to divert, if necessary.

Masks came off after shutdown. He knew that the copilot disappeared to the back of the cockpit, but making sure the copilot actually got out of the airplane was his primary concern.

During the landing rollout sequence the smoke began to pour into the cockpit area.

Initially, there was confusion on the part of ATC about which runway they were going to land on, but that was quickly resolved with no problems.

ARFF was very fast. He observed them off to the left side of the airplane while they were landing, possibly on a parallel taxiway.

He informed ARFF that there were hazardous materials on board the airplane. He also informed them that he could not locate the hazardous materials paperwork, but UPS would be able to provide it. He also told them that the flight originated from ATL.

He did not observe anyone re-enter the airplane while he was on the ground by the airplane.

While in the ambulance, he tried to contact the UPS dispatcher and chief pilot via cell phone. They spent several hours in the hospital and a UPS representative met them and assisted them in moving to the hotel. The crew's rest at the hotel was interrupted for a drug test.

Interview:	Jess W. Grigg, DC-8 First Officer, United Parcel Service Company
Represented By:	Self
Date:	February 9, 2006
Time:	1235 EST
Location:	Marriott Philadelphia Airport, PHL
Present:	Operations Group

During the interview, Mr. Grigg stated the following information:

He completed all of his primary flight training at Louisiana Technical University, including single engine commercial and instrument ratings, multiengine commercial and instrument ratings, and "CFII" ratings. He became a flight instructor at the Acme School of Aeronautics in Fort Worth, Texas. It had 50 airplanes and 350 students, many from the Middle East. He then worked as a pilot for a charter company, Alpha-Century Corporation in Fort Worth (and had the opportunity to fly the future U.S. President, George Bush) flying King Airs until April 1991. From 1991 to 1995, he flew for the commuter airline, Express Airlines I (now called Pinnacle Airlines). His date of hire at UPS is February 19, 1996.

His total flight time is about 7,500 hours. His total DC-8 time is about 2,500 to 2,700 hours, of which 600 hours was as flight engineer and the rest was accumulated over the last 8 years as first officer.

He has been approved for upgrade to DC-8 captain at UPS and may begin training in May.

The accident flight was routine in its paperwork, preflight, boarding, and looked like it might depart early. The load supervisor liked them, since they had helped her avoid a delay the previous night. She was thankful, and Mr. Grigg joked with her about expressing her thankfulness by bringing the crew cookies. She brought the weight and balance papers and the flight engineer closed the door and armed the slide. Suddenly, the load supervisor appeared again in the cockpit to bring the HAZMAT paperwork. She stepped over the emergency exit slide to gain entry to the airplane. Maintenance personnel decided to repack the slide before departure. It took two efforts to accomplish this and, as a result, the flight departed a few minutes behind schedule. The engine start, taxi, takeoff, climb-out and the initial portion of the flight were normal. They leveled off at FL 330 direct Spartanburg VOR. He was the flying pilot. About halfway through the flight, he briefed the approach for runway 27R in PHL. The captain jokingly commented that as an IOE [Initial Operating Experience] instructor he had instructed students to hold their briefing until the last 30 minutes of the flight so, in case there was a problem, it would be captured on the cockpit voice recorder. While the airplane was still flying on autopilot, Mr. Grigg accomplished an abbreviated briefing.

ATC cleared the flight direct to OOD [Woodstown VOR], to cross OOD 10 south at 11,000 feet. About this time, he smelled a very slight odor resembling burning wood, like a child's wood burning set or wood chips on a grill. The DC-8 often has odors and smells that differ each day. On some flights he had smelled electrical smells and smells generated by water separator socks in the air conditioner, like a wet dog or a dried mouse. The captain and the flight engineer agreed that there was a slight odor. The flight engineer went back to the courier area with his flashlight to investigate. He returned and said he did not see smoke in the back.

It was time to start the descent. The captain and the flight engineer started to troubleshoot the smell and they initially suspected pack smoke. It was just a light scent. There was no visible smoke. As they turned the packs off and changed pressurization, the smell went away.

The descent though 18,000 feet was normal. The flight was vectored south of PHL for a left downwind entry, and descended from 11,000 to 4,000 feet. There was good visibility, only one other airplane on the TCAS [Traffic Alert and Collision Avoidance System], and he was looking forward to the crew meal sandwich. They were on a good left base and had a heading to the Outer Marker. They had briefed the approach to 27R, and ACARS said this runway was active. They were at 4,000 feet, cleared to descend, and reported the airport in sight. Just when they were switched over to the tower, "everything broke loose." The flight engineer said "Cargo smoke light. Oxygen masks on." As he said this, a little smoke blew forward. It had a very strong, "woody" smell. The captain told the tower "we have cargo smoke and fire. Send the equipment." Mr. Grigg changed heading immediately toward the runway. He could see runway 27L and aimed for the runway 27R threshold. He thought to himself, "real thing, one chance to get stable and stop the airplane." The first officer stated that he was flying the airplane and the captain did the checklists, worked the radios, and "watched me." The flight engineer was on his own.

Mr. Grigg was wearing his oxygen mask. He did not want to fumble to wear goggles, which could make the approach unstable, especially considering their proximity to the airport, "no time." The smoke increased. There was a GPWS "glide slope" warning once and he leveled off slightly. He saw that they were right at V_{REF} but he did not want any extra speed. He added a little power. The airspeed was at the "inner bug" when they got the glide slope callout several times but he did not know why. On short final, the smoke increased and he heard someone say we are going to evacuate. ATC said that they were lined to the right, and he asked the captain if they were cleared to land on 27R. ATC then provided the landing clearance to 27R and told the fire trucks (which had been waiting by 27L) to move to 27R. The smoke increased on short final. Someone stated, "emergency evacuation." It was a normal rate of descent and the airplane landed on centerline. The thrust reversers deployed normally as the airplane decelerated and as transition of airplane control to the captain was accomplished. As the airplane decelerated, heavy smoke pushed forward. When the airplane came to a stop, he opened his window. Smoke went out the window. He leaned out the window to get fresh air. He heard chatter on the radio, tower talking with the fire trucks. He "stepped" on the

transmissions and transmitted using his hand microphone, “UPS flight evacuating aircraft.”

As part of the shutdown procedure, he moved all four fuel control levers and all four fire handles; the number four fire handle plastic lens came off in his hand. He heard the flight engineer say, “battery switch off.” The emergency evacuation checklist was accomplished. He reached for the escape rope but he could not locate the access cover slit. He was only able to feel the oxygen mask hanger. The smoke was so heavy that he could not see his hand. He got his flashlight, heard the slide inflate, and said “grab the paperwork” to the captain. In training they had talked about the FedEx crash and the importance of the HAZMAT paperwork. He grabbed his flashlight, cell phone and, reached behind the captain’s seat for the paperwork but it was not there. It is not always in the same place. He thought the captain had evacuated. He grabbed his coat as he went out the door. He saw the flight engineer at the bottom of the slide and then went down the slide. He did not see the captain there. Black smoke was rolling out the door. He did not see any sweep of light in the darkness or other evidence of the captain; he became concerned about the captain’s safety. Finally, the captain came out. They were all coughing. His chest was burning.

The ARFF people were top notch and put them quickly into an ambulance.

The smell of the smoke changed before landing from “woody” to “burning plastic containers” with background wood/cardboard smells.

He received oxygen in the hospital emergency room; they initially had trouble getting them on oxygen. The hospital took chest x-rays and drew blood. After three hours, a UPS representative came and consoled them. They were released at 0352 local time.

Asked whether there was anything unusual during the initial part of the flight, Mr. Grigg said it was an entirely normal, good flight. The initial odor was very light. He speeded up slightly in response to it, maybe adding 15 knots, but they already had a 100-knot tailwind and were making good time anyway. They thought it might be pack smoke. Then the smoke went away. The DC-8 can sometimes smell like a wet hunting dog and have other smells.

Regarding the slide, if there was a choice between deferring it or fixing it, UPS would defer it. Getting out on time is very important. The nature of the business is timeliness. Emphasis on safety is number one but there are “multiple empires.”

UPS training is enjoyable and top notch and it saved their lives (along with their proximity to the airport when the fire became full grown). UPS does not skimp on training. It is friendly but they expect you to learn and to come prepared. He has had several DC-8 training sessions concerning on-board fires. After the FedEx crash, they had timed trials to see how long it took them to get down. He had done recurrent training on smoke of unknown origin. They do training on procedures to get out of the seat. You rely on instinct but react as trained.

He asked the captain why it took him so long to evacuate and learned that the captain was looking for him. You could not see because of the thick smoke.

On the approach, there was a parallax and he was aiming for the runway threshold. There is a huge emphasis on stabilized approaches at UPS. It is a safety issue. He wanted to get a stabilized approach and was at the "inner bug," which is a speed additive to V_{REF}, or a target speed fully configured for landing. Speed control is very important in making a DC-8 landing. He did not see a PAPI [Precision Approach Path Indicator] or VASI [Visual Approach Slope Indicator]. You cross the runway threshold at V_{REF}.

The first odor appeared when they were about 180 miles south of Woodstown VOR. No smoke detector or fire warning lights had activated.

A firefighter came to the hospital to interview the crew and Mr. Grigg assisted him, but the firefighter kept putting words into his statement and he had to repeatedly correct him.

They did not discuss diverting because there was no cause to divert. They were over Washington, D.C. The DC-8 can have "funky" smells and there was no visible smoke. The flight engineer did not see any smoke in the back. The situation did not warrant overreacting, especially at Washington, D.C. where there could be security concerns. They did not perceive the odor as a threat. It was not worth overreacting. All smell went totally away on descent; "almost like a light switch." Without warning lights, they did not have guidance directing them toward a checklist. They had to troubleshoot using system knowledge.

When on base leg, the smoke came back with a vengeance, returning so strong and suddenly that it was almost like someone flipped a switch. Maybe pushing the nose over made it come forward. It did not smell at all like an electrical smell. It was like a cardboard box, a "woody" smell.

He had never smelled a pack smell in the actual airplane. In the simulator they used a sign that said "pack smell" but did not have an actual smell.

The captain spoke for the crew and told fire personnel that we could not find the HAZMAT paperwork. The flight engineer said that he saw the HAZMAT envelope fall on the floor so he picked it up and stuck it by the crash axe near the circuit breaker panel. The captain told ARFF that the paperwork was still in the cockpit. The conversation with the ARFF personnel was brief, no more than 5 to 10 minutes, before they were whisked away for treatment.

He had never met this captain or flight engineer before the start of the trip sequence on Monday, February 6, 2006.

He had no difficulties getting out of the airplane. He got out of his seat and exited

the airplane quickly and easily. He had never gone out the window and, if given a choice, would always go out via the slide. He had concerns about the age and reliability of the ropes; however, he had seen the ropes in training and, if it were a question of survival, would get out the window.

He saw the emergency vehicles on the runway median through his peripheral vision as the airplane was stopping. Several emergency vehicles were right there when the airplane stopped.

After the captain got out, they saw smoke billowing out the windows and door. There were no flames and no heat that would be associated with fire, just black smoke. From his viewpoint at the front of the airplane, he could not do a full scan of the airplane and its rear portion. The ARFF people were top notch. "We are second fiddle to passenger aircraft."

The accident crew was scheduled to fly together for a week. On Monday, February 6, 2006, he deadheaded to ATL. That evening they flew ATL to PHL and, following the "sort," PHL to ATL. They were scheduled to fly the same trips on February 7, 8, and 9, 2006, and complete the trip pairing when they returned to ATL on February 10, 2006.

He removed the oxygen mask and put his head out the window to get fresh air. He only got half a mouthful of air because it was mixed with smoke. He was not sure exactly when he removed the mask, although he thought it was after they stopped and that he did not wear a mask as they were executing the checklist. The mask fit fine. They preflight the masks, clean them, and test them.

SOP [Standard Operating Procedures] are very "pure" at UPS and standardization is emphasized. It is unlike his experience at the commuter airline where every captain did his own thing.

He pulled all four fire handles. It was so black in the cockpit that it was hard to find switches. He wanted to exit the airplane but stayed long enough to get the procedure done.

The smoke was on top of them "like a bear jumping out of a tree."

When he does not have work responsibilities, he typically goes to bed at midnight or 0100 and wakes up at 0800 to 0900. On Saturday, February 4, 2006, he had normal activities at home and went to bed about 2300. On Sunday, February 5, 2006, he awoke about 0700 to attend church. He attended a Super Bowl party, did not drink alcohol at it, and left during halftime. He went to bed about 2200 and awoke on Monday, February 6, 2006, at 0415 to 0430 to commute to ATL. ATL was rainy. He ate a buffet at the hotel, napped from 1330 to 1800, worked out, skipped dinner, and had a 2110 pick up at the hotel. The first night of a sequence is the hardest because of the circadian change to a night schedule and working with a new crew. On Tuesday, February 7, 2006, he was drug tested at the airport after he arrived and did not get to bed until about 1000. He slept until

noon and then ate a buffet lunch. He had a few hours nap in the afternoon, worked out, and skipped dinner.

He did not have any previous accidents but he had a previous emergency, which occurred in the last 5 years when they had a high-speed rejected takeoff at IAD. They declared an emergency and ARFF met them. He had never experienced a previous in-flight fire and knew no one else who did. He received training on the FedEx cargo fire accident.

His health was good, and had improved in the past six months because he had some minor elective surgery. His eyesight was good and he did not use corrective lenses. His hearing was good. His sense of smell was normal. There had been no major changes in his personal or financial situations in the past six months.

He has two flashlights that he keeps in his flight kit.

Based on his experience, he would recommend the installation of cargo fire suppression systems in cargo airplanes.

The captain declared an emergency, maybe not using the word “emergency” but saying “cargo smoke” or “cargo fire.” ATC asked for “SOBs” [Souls on Board] and fuel quantity.

ATC gave them the option of landing on runway 27L, but they had briefed and set up for runway 27R.

Interview:	Joseph J. Chvatal, DC-8 Flight Engineer, United Parcel Service Company
Represented By:	Self
Date:	February 9, 2006
Time:	1000 EST
Location:	Marriott Philadelphia Airport, PHL
Present:	Operations Group

During the interview, Mr. Chvatal stated the following information:

His date of hire with United Parcel Service Company is January 23, 1994. He is an ex-military pilot who flew F-4s, A-7s and A-10s. He was employed by TWA for about a year as a flight engineer on the B-747. He was then employed by America West Airlines as a B-747 flight engineer before coming to United Parcel Service Company. He, started as a B-727 Flight engineer and then later that year transitioned to B-757 as a first officer and captain. After age 60, he transitioned to the DC-8 as a flight engineer.

His total military flight time is 3,500 hours, 5,500 hours flight time on the B-757, and he has about 2,000 hours as flight engineer flight time, including 418 to 430 hours on the DC-8.

He stated that he arrived at ATL on time for the flight to PHL. The airplane was loaded with cargo about 20 minutes early. The loading agent brought flight paperwork to the airplane and left. Mr. Chvatal closed the cabin door, put the slide bar in place, and sat down in his seat. The next thing he knew, the loading agent was standing next to him. He said, “How did you get in?” She had opened the cabin door and the emergency exit slide fell out of its container. Maintenance personnel subsequently repacked the slide twice. The flight blocked out nine minutes late and departed on runway 26L.

The flight was cleared direct to Spartanburg VORTAC, and FL330. The cruise portion of the flight was normal but about 180 miles out while descending from FL330 to FL240, the first officer stated that he smelled an odor similar to burning wood. Mr. Chvatal got out of his seat and went to the courier area. He pulled back the smoke curtain and shined a flashlight along the wall of the upper cargo deck. He could smell the odor but there were no fumes. He sealed the smoke curtain and returned to the cockpit and accomplished the fume evacuation procedure. This included shutting off the air conditioning packs and bleeds one at a time. He turned on the “Winnebago” [Supplemental Cockpit Climate Control System] fan. He rechecked the cargo area. The odor was stronger in the back but still not burning his eyes. He did not don his oxygen mask at that time.

The flight was then cleared to descend to 11,000 feet. There was a discussion among the crewmembers about "just dumping the pressure" when below 10,000 feet. As the flight further descended, the smell got more intense. There was just the smell with no smoke. Between 5,000 feet and 3,000 feet, the upper deck smoke detector illuminated. The system was in "normal." The cargo smoke and fire checklist was accomplished. Some smoke appeared on the first officer's side of the cockpit and then the fire detector light for the lower cargo compartment (C1) illuminated. He said we have a fire in the lower cargo compartment. They donned their oxygen masks. At a point when below 3,000 feet the captain contacted Tower and advised that they had a smoke light. Two to three seconds later the captain called Tower and said they had a fire indication. He could hear the alarm in the background of the tower's transmissions. Tower asked them how many "souls on board" and fuel on board. The captain said three people on board and two hours (23,000 pounds) of fuel.

The first officer had the field in sight as he turned toward the airport for a visual approach. Mr. Chvatal continued to run the checklist. He then went back and closed the cabin air shutoff valve. When he opened the access panel, black smoke billowed out. He returned to the cockpit and closed the louver in the cockpit door. He sat down in his seat as the captain was making the 500-foot altitude callout. Mr. Chvatal started the Before Landing checklist and fastened his seatbelt but he did not get his shoulder harness on. After the airplane touched down and engine reversers were deployed, the smoke increased in intensity to the point that he could not see. He turned the battery switch off and took the last breath of oxygen before going back to open the cabin door. He heard the slide go "clunk." He felt the slide and used the lanyard to deploy the slide. He could hear it inflate and then he went down the slide. He yelled to the crewmembers that the slide was good.

The captain had thrown the escape rope out the cockpit window but it only extended part way down the side of the fuselage. The first officer came down the slide but the captain was still inside looking for the paperwork. Mr. Chvatal called for the captain and then he saw the captain's foot appear at the doorway. The captain came down the slide and they got 20 yards from the airplane. The EMTs were already there. They got to the hospital 20 minutes later.

The three crewmembers had never flown together before this trip pairing. Because of their good training at UPS the incident was handled in an orderly fashion; they were not in a panic. The first officer was the flying pilot. Mr. Chvatal and the captain handled the problem while the first officer flew the airplane. They did what they were supposed to do and got out of the airplane.

In ATL, the agent normally brings out the HAZMAT form with the other paperwork. They were not rushed in ATL. They got the paperwork at 0300 UTC and the flight blocked out at 0320 UTC. There was plenty of time.

The first officer was a really big guy.

En route, the HAZMAT envelope had fallen on the floor. Mr. Chvatal picked it up and wedged it in the fire axe sheath. There is no HAZMAT pouch on this airplane.

When he arrived at the airplane in ATL, the cargo loading was already in progress. Three of the four lower cargo compartments had been loaded. He does not monitor the loading process. As soon as the HAZMAT paperwork is available, the agent is supposed to bring it to the captain as freight is loaded. There was nothing unusual on the form. There were some consumer products listed but he did not know what position the material was loaded on the airplane.

The checklist for fumes was accomplished about 180 miles out from PHL. He stated that he thought it would be better to just assume there is a fire rather than dealing with the fumes checklist. When doing the fumes checklist, airflow is increased whereas the procedure for a fire results in minimum airflow. Perhaps the fumes checklist should be eliminated.

There is no cargo fire suppression on the DC-8. “Get on the ground and get out.”

He did not put the smoke goggles on; it’s not on the checklist. When he did the checklist for the fire, the oxygen hose was not long enough to get to the emergency cabin air shutoff valve handle next to the courier seats. He had to take the oxygen mask off to get to the handle.

The first officer was a “young guy” who did a great job of flying the airplane. CRM [Crew Resource Management] is important. They talked through the problem.

The “goggles were not important, survival was.” They did not put the goggles on because there was “no time, no irritation in the eyes.”

There was some confusion with the runway in use at PHL. Tower thought they were going to land on runway 27L but they were always going to use runway 27R.

After they were off the airplane, one of the ARFF guys walked up the slide and got the HAZMAT envelope. ARFF had asked about HAZMAT onboard and he was told the envelope was in the cockpit.

En route to PHL, there were no unusual sounds in the airplane.

The first officer had just received a bid for captain and he was asking the flight engineer and the captain on this flight about their flying experiences.

The odor they noticed in flight was a “low odor of a wood burning set.”

The captain started losing instruments on short final but Mr. Chvatal did not see it. The first officer did not lose his instruments. When they came to a stop the first

officer shutdown the engines using the fire handles. He ripped one of the handles right off. He did not fire the bottles because there was no engine fire.

Pilots have flashlights but if they just keep them in the cockpit they may have difficulty using them in an emergency. Mr. Chvatal kept his “mag” light on his belt and learned the value of this in the emergency. They can train for smoke but still not imagine how dense it is in the actual situation. “It stunk like hell.”

It was cold outside the airplane.

In hindsight, if he had known there was an actual fire, he would have handled the situation differently. He would treat fumes as a fire. You need to get the PBE [Protective Breathing Equipment], fire axe and extinguisher ready in advance.

The DC-8 does not have speed brakes so you need to slow it up and get it configured well ahead of time.

Every year, in recurrent training, they discuss fire issues and have at least one scenario in which they don the oxygen mask and goggles right up to touchdown.

UPS has the best training available. CRM went well and was critical in the emergency. Visual conditions helped.

He has been on the DC-8 for one and one half years.

During initial training, his simulator mate bailed out on him so he received additional one-on-one training. Initial training covered engine fire procedures, PBE use, cargo fire procedures, and checklist procedures. Now he would rip the PBE out of the bag to have it ready. He was always trained to pull the lanyard to inflate the slide and he did this. Initially, on the accident flight, he did not think there was a fire.

The slide inflated instantaneously. The smartest way out was using the slide and not the rope.

We were not thinking about training, just doing what we knew to do. Everything happened in slow motion, there was no sense of urgency.

He got on his hands and knees to pull the lanyard to inflate the slide.

The first odor was noticed when the flight was 180 miles from Philadelphia, a distance observed on the EADI. The last time he looked at the INS [Inertial Navigation System], he observed 173 miles remaining to PHL. They were still fooling with the bleeds to get rid of the odor.

There was no discussion about diverting. No headache; eyes were not burning; it was just a curious smell.

In the event of fumes, it would be a good idea to don your oxygen mask. The fume evacuation procedures call for putting both packs on maximum flow to blow the air away from the cockpit. In this case it did not help. Then they started troubleshooting the problem by shutting the bleeds off individually. This was not covered in the book. There was only a bad smell, no other indications.

There is a 7-position switch associated with the amber upper-deck smoke light. When the switch is in the normal position, it allows for all lights to illuminate. You can then flip through all individual positions to find which position created the alert; however, he did not have time to do this procedure. They got a smoke light on the upper deck then, followed by a fire light in the lower deck with a readout of C1 and the illumination of the master warning light.

It was a clear VFR night with plenty of airports available for diverting.

Tower asked whether they were going to land on runway 27L and we said we would land on runway 27R. They had sent the fire trucks to runway 27L. The crew had briefed runway 27R, the ILS was set for runway 27R, and runway 27R was convenient to their parking area. Tower just asked.

The first truck was pulling up as he got down the slide. He did not see flames from the airplane after he evacuated, only smoke; however, he recalled that ATC might have said that they had a fire. The EMT person put them in the ambulance and administered oxygen. The ARFF response was more than adequate.

The door opened okay and he could do it with his eyes closed. When he opened the door he heard a “clunk;” the slide came out of the container. He did not know whether the slide deployed automatically but thought it was manual and he was always trained to pull the lanyard to inflate the slide and he did this.

When the captain threw the escape rope out the window it did not fully extend. It just came halfway down the fuselage and dangled there. The first officer opened his window to get fresh air but did not throw the rope out. Everybody went down the slide.

They landed shortly after midnight, and the clock in the ambulance read 0010 when they arrived there. They arrived at the hospital at 0025.

He was the least exposed of the group. He had a raspy voice and felt a burning sensation in his throat but not in his chest. He was on oxygen for about two hours and was at the hospital for a total of about four hours. They did blood tests, EKG, chest X-ray, and a ventilation test. The hospital staff was excellent. The doctor got them immediate help. The head resident called UPS to get a list of all HAZMAT for toxicology testing. UPS provided the information and the doctor felt it was not an issue.

For weight and balance determination, the flight crew is given the weight and balance [similar to a load manifest] about ten minutes prior to departure. The agent brings the HAZMAT papers. They also get weight and balance first on ACARS and compare it to the hard copy. He determines the maximum allowable takeoff weight and the stabilizer trim setting on the takeoff data card and hands it to the captain. The captain signs the paperwork, the loader gets a copy and the captain keeps a copy. The weight of the containers is shown on the forms, but they do not know what is in the containers.

There are 18 cargo positions. There was some cargo in the lower compartments but they were not full.

There was no electrical smell to the smoke.

Mr. Chvatal said that he provided a blood sample about 0100 for hospital toxicology testing that examined carbon dioxide and oxygen content. The crewmembers provided urine and Breathalyzer samples later in the hotel for drug testing.

When he did not have work responsibilities, he typically went to bed about 2200 and awoke about 0630. On Saturday, February 4, 2006, he had normal activities at home in the morning helping his wife, attended a memorial service in the afternoon, had dinner with a friend, read, watched TV, and went to bed about 2200. On Sunday, February 5, 2006, he awoke at 0700, worked around the house, and went to bed about 2130. He awoke on Monday, February 6, 2006, at 0500, flew to ATL where he arrived about noon, napped in the hotel from 1500 to 1730, ate dinner, and went to work about 2100. The crew flew to PHL and, after the "sort," retuned to ATL around 0520. He slept from 0600 to 1100, went for a long walk, napped from 1600 to 1800, ate dinner, and reported for work about 2100. This was his normal layover routine and he felt rested.

This trip pairing was the first time he met the other crewmembers from the accident flight. The captain lived in Florida, had two children, and had flown the DC-8 "forever." He flew the DC-8 with Evergreen Airlines. He seemed real calm and laid back. The captain began the trip by briefing the crew on how he liked to conduct the flight, a good CRM briefing. He emphasized the difficulty of taxiing at ATL due to local terminologies. He did nothing out of the ordinary. Mr. Chvatal felt very comfortable with UPS training on standardization and the comfort with a new crew that you knew what they would be doing.

The first officer lived in Louisville, came from a commuter background, and seemed like a great guy and good pilot. He followed standard procedures and flew "a good airplane." He flew the return trip to ATL the previous night showing good pilot skills.

Mr. Chvatal did not have any previous accidents. He had a previous emergency involving the electronic engine control in a B-757 airplane. He had been shot at in combat in Vietnam.

There had been no major changes in his personal or financial situations in the past six months. His health had improved in the past six months because he lost 20 pounds. His vision was fine. He wore corrective lenses for astigmatism, presbyopia. His hearing was fine. His sense of smell was average. The accident smell was a “woody” smell. Airplanes can have strange smells, such as when you have oil on a sock from the air conditioner when the filter gets plugged with nicotine; therefore, the smell on the accident flight was not an alarming one. There was no burning sensation in the nostrils or eyes, which would have alerted him. The first officer was the one who first noticed the smoke. Mr. Chvatal saw the smoke first enter the cockpit to the right of the first officer, coming up from below his right hip.

On the DC-8 there is a reinforced cargo net shield with a Velcro strip, which the crew closes to slow the flow of smoke. When the airplane door is closed, they have a louver to bring air up from the back and the crew closes it when there is smoke. On two occasions, Mr. Chvatal went back to check the smell. He pulled back the shield and shined his light back there to look for smoke. It was not an alarming smell. With his light, he could see back three or four “cans.”

Mr. Chvatal had not previously experienced in-flight smoke or fire and did not know any pilots who had experienced in-flight fires. He did not know why cargo airplanes were not equipped with fire suppression capability, although there might be configuration problems with such capability for the upper cargo along with cost considerations.

Based on his experiences, he would make the following recommendations:

- Every pilot should keep a flashlight on his person
- There should be evacuation slides in every airplane (the B-757 does not have them)
- He was glad there were no jump seat passengers. It is not a large cockpit, and he would have had trouble stumbling over them in trying to evacuate
- Re-evaluate the checklist for unknown fumes. It requires pushing air through the cargo compartment to vent fumes, exactly the opposite of what you need to do if there is a fire present
- The smell he experienced never had an electrical smell

UPS training was good. He felt comfortable with everything and fear never entered his mind. The runway was close and he had a checklist to perform. The aspect of training that was especially helpful was training by rote memory so that performance was automatic. The training at TWA was excellent and very similar to that at UPS; both emphasized standardization. There was a good division of responsibility, with the first officer doing the flying. He knew how to fly well and there was a comfort level in his ability. The situation developed so fast that the crew only had time to react to it. The first officer provided young vigor and strength, while the old crewmembers provided knowledge and judgment.

He replaced the smoke curtain when he completed looking into the cargo area. In the DC-8 there is no room to walk back into the cargo area. There is cargo lighting. He illuminated it and no smoke was visible. He looked left, and could see past three cargo "cans." If the cargo lighting were brighter, such as on the Airbus, it might be possible to see farther into the compartment.

He wore the oxygen mask. He stood up to activate the Main Cargo Air Shutoff Valve handle as part of the shutoff procedure, got into the area but had to remove the oxygen mask to reach the handle. If there were no slide, he would go out the window but he could not see what the pilots were doing at the windows and did not have a high level of confidence in evacuating through the window. You would have to remove the oxygen mask and exit the window through billowing smoke.

The first smell appeared just after they were cleared to descend from FL330. As they descended below 5,000 feet, the smoke got really bad. On short final, over the numbers, smoke started streaming into the cockpit. At full reverse, the "flood gates" opened and he could no longer see the other pilots. He took a last breath of oxygen, went back with his flashlight, holding his breath to evacuate. When the airplane door opened, he expected a rush of fresh air and he took a single quick breath. It was a mistake because he breathed smoke. The emergency exit lights were no help at all. He saw them from the ground after he evacuated.

The cockpit door is standard with a louver at the bottom.

He had the "fume evacuation" checklist out to initially troubleshoot the smell. They did not perform the bold items, but used the remaining items to try to evacuate the smell. They were unable to determine its cause and decided to live with the smell until they landed.

ATC recognized that there was an emergency. He could hear sirens in the background of the ATC transmission and they asked about "souls on board."

Breathing oxygen via the oxygen mask was fine. He had to remove his glasses to don the mask, but the seal was fine. The odor went away with the mask on.

They did not un-harness the fire extinguisher.

The landing was a nice firm one, not "greased" but not at all hard.

The approach was normal. When they got smoke, the first officer started an arc to the "numbers." He decided not to square the approach.

The "recirc" [recirculation] fan was turned off immediately upon smelling the odor.

He turned the last pack off about 500 feet.

The cockpit door was closed after touchdown when the smoke came up. The first smoke appeared to the front of the engineer's panel, then the smoke was everywhere and just overwhelmed the cockpit. It was dense everywhere.

There was no fire suppression capability in the cargo area other than the hand-held fire extinguisher. The fire suppression bottles are for the engines.

The cabin air shutoff valve is just above the courier seats to the left of the Velcro door. It is part of the shutdown checklist.

Crew suitcases were all stowed on the courier seats and were left on board.

Nobody got excited. The crewmembers meshed well.